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NEW COLEOPTERA FROM WESTERN HOT SPRINGS¹

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The three descriptions brought together in this paper are of widely different species which have in common only aquatic habits and an apparent preference for thermal water. They were collected with a number of described species by Professor C. T. Brues in Nevada, Oregon, and California during the summer of 1927, and are described now so that the names will be available for use by Professor Brues in his paper on the hot spring fauna, which will probably appear in the Proceedings of the American Academy of Arts and Sciences.

I am indebted to Mr. Nathan Banks and Director Thomas Barbour of the Museum of Comparative Zoölogy at Cambridge for permitting me to study the types of *Ochthebius* and *Helmis* in the LeConte collection, and to Mr. H. C. Fall for the opportunity of examining some of the types of his species of *Coelambus*.

By arrangement with Professor Brues, the holotype, allotype if any, and some of the paratypes of each species will be deposited in the Museum of Comparative Zoölogy, Cambridge, Massachusetts.

***Coelambus thermarum* n. sp.**

Moderately elongate, oval. Front not margined. Head and pronotum piceous, the former with a small spot on the vertex, the latter with the side margins, vaguely paler; elytra pale testaceous and semi-transparent except for the fuscous

¹Contribution from the Entomological Laboratory of the Bussey Institution, Harvard University, No. 288.

suture, a fine fuscous line along the sutural series of impressed punctures, and a large faint irregular infusate cloud on the disk extending from just before the middle nearly to apex. Body beneath black; legs rufo-piceous; antennæ rufous with the outer joints infusate. Integuments shining above and below. Disk of pronotum and elytra moderately densely punctured with rather fine punctures which may become sparse on the pronotum at middle, and which scarcely vary in size on the elytra except for the distinctly impressed sutural and discal series; metasternum, coxal plates, and sides of ventral segments coarsely punctured; epipleuræ more finely but rather closely punctured. Hind femora finely strigose in both sexes.

♂ characters: pro- and mesotarsi a little broader than in the ♀, claws small and unmodified; front femur broader than in the ♀, shining and bent downward apically, deeply transversely impressed on the anterior face a little before apex, posterior face with a longitudinal line of long silky pubescence near the upper margin and a shorter one apically near the lower margin; front tibia a little broader than in the ♀, with a longitudinal line of silky pubescence along the middle of the posterior face; middle femur sinuate and produced downward (inward) in a small shining lobe at apex, broadly lobed below at base, the lobe flattened and punctate on the anterior face; middle tibia nearly parallel sided except for a small lobe internally near base; hind femur broader than in the ♀; hind tibia with sexual pubescence along the lower edge.

♀ characters: no unusual modifications except that the middle tibia is slightly broadened at base where it is lobed in the ♂.

Length: 4.1-3.2 mm. Width: 2.0-1.6 mm. Holotype: 4.0 x 2.0 mm.

Holotype ♂ and allotype ♀ no. 15948 in the Museum of Comparative Zoölogy, collected by Professor C. T. Brues in "Hot Spring no. 23-a; Temperature 30°; 37 mi. So. of Battle Mtn., Nevada." Paratypes: 2 ♀'s with the same data as the holotype; 6 ♂'s, 2 ♀'s from "Hot Spring no. 20; Temperature 38°; 29 mi. So. of Winnemucca, Nevada," also collected by Professor Brues. Paratypes to be deposited in the Museum of

Comparative Zoölogy, the United States National Museum, the California Academy of Sciences, the collection of Mr. H. C. Fall, and the collection of the writer.

The semi-transparent elytra and striking secondary sexual characters of the ♂ make this a very distinct and easily recognized species. In Mr. Fall's table in the "North American Species of *Calambus*," published by John D. Sherman Jr., Mt. Vernon, N. Y., 1919, it would run to near *C. pedalis* Fall, from which it may be distinguished by several definite characters. Direct comparison shows that *C. thermarum* is also a narrower species with a proportionately smaller prothorax and narrower head. For the opportunity of examining the type and type series of *C. pedalis* at Tyngsboro I am indebted to Mr. Fall, whose excellent revision of *Calambus* has made the placing of the present species ridiculously easy.

Ochthebius bruesi n. sp.

Elongate, slightly depressed. Black; head and pronotum with distinct æneous or metallic rose reflections; elytra entirely piceous to testaceous with piceous humeri and base; legs dull rufous, tarsi and basal part of femora darker; antennæ and maxillary palpi rufous, the latter with the ultimate and the tip of the penultimate joints fuscous. Ultimate joint of maxillary palpus twice as long as wide, narrowed and rounded at apex, but subject to modification; penultimate joint typically convex on all sides, but at times flattened and concave on one side, as described below. Head bifoviate between the eyes; labrum entire, feebly rounded in front. Prothorax about two-fifths wider than long, widest about two-sevenths from the distinct but not prominent apical angles, rather strongly narrowed and with very broadly and evenly recurved sides in posterior five-sevenths; lateral transparent membrane beginning a little behind anterior angles, widest near base, where about one-seventh as wide as prothoracic base; median groove well impressed, nearly complete; discal impressions deep, well separated, the posterior longer, placed nearly as in *O. interruptus*; lateral grooves narrow, well impressed; pronotal disk rather strongly shining, not or but

very slightly alutaceous, sparsely punctured. Elytra about one and two-thirds times as long as wide; sides explanate to about one-third from apex; disk slightly shining; striæ closely punctate to apex, where they are a little confused.

Length: 2.1-2.3 mm. Width: 0.9-1.0 mm.

Holotype number 15950 in the Museum of Comparative Zoölogy, collected by Professor C. T. Brues in "Hot Spring no. 24; Temperature 38.8°; Beowawe, Nevada." Paratypes: 24 with the same data as the holotype; 1 collected by Professor Brues in "Hot spring no. 9; Amedee, California." Paratypes to be deposited in the Museum of Comparative Zoölogy, the United States National Museum, the Canadian National Collection, the California Academy of Sciences, the collection of Mr. H. C. Fall, and that of the writer.

In Horn's table (Trans. American Ent. Soc., 1890, pp. 18-19) *O. bruesi* would fall in *Ochthebius s. str.* near *interruptus* and *attritus*, from both of which it differs in being larger and more elongate and in having both the discal and lateral impressions strongly marked. The legs are longer and stronger, and the entire insect has a distinctive loose-jointed appearance which is difficult to describe. I have seen all the older types of the genus in the LeConte collection at Cambridge, and have studied all the more recent American descriptions, none of which can fit the species here described.

The penultimate joint of the maxillary palpus is rather curiously and consistently deformed in certain of the specimens at hand. Normally it is rounded on all sides and rather thick, but sometimes it is flattened in the vertical plane and concave on one side. In this case the ultimate and apparently the pseudo-basal joints are also strongly flattened. Of the twenty four specimens in which the palpi can be clearly seen, thirteen are normal on both sides, two have the right palpus only deformed, two have the left palpus only deformed, and six have both palpi deformed. One specimen has the left palpus normal and the right with the penultimate joint represented by a small globular body and the ultimate joint absent. How this wholesale malformation has been produced I do not know.

I take great pleasure in naming this insect after its collector, in recognition of his success in collecting hot spring Coleoptera.

***Helmis thermarum* n. sp.**

Elongate, parallel, rather convex. Black or piceous; tarsi, palpi, and antennæ dull rufous. Last joint maxillary palpus about one and one-half times as long as wide. Antennæ eleven-jointed with the second joint distinctly and evenly inflated. Prosternal intercoxal process not quite half as wide as the mesosternum between the coxæ; meso- and metasterna sulcate along the middle; last ventral segment finely notched at sides. Femora sides of ventral surface, and inner side of front tibiæ at apex clothed with a dense mat of silvery hair, which may, however, be partly rubbed away. Prothorax rectangular, distinctly longer than wide, a little narrowed at base and apex, the sides broadly and shallowly emarginate two-fifths from apex where there is a complete transverse impression on the pronotal disk; lateral margins finely crenate, nearly paralleled on the disk, about a fifth of the prothoracic width from the sides, by a pair of fine lateral costæ which extend from base to apex except that they may be partly or almost entirely obsolete on the interior two-fifths; pronotum in anterior two-fifths faintly shining, evenly convex, sparsely punctate; pronotum in anterior three-fifths opaque, with a low rounded "Y"-shaped elevation running from the middle of the base to the transverse impression, where the arms of the "Y" terminate on each side of a central foveate depression; on each side there is also an oblique elevation extending from near the base of the "Y" to near the pronotal margin two-fifths from base. Elytra about twice as long as wide, the sides parallel from just back of humeri to apical third; disk dull, finely pubescent; third interval not or but slightly prominent at base, seventh interval with a fine inconspicuous costa; discal striæ marked by rows of very coarse punctures which are larger and sub-confluent toward elytral base and which extend to apex, giving the whole elytron the appearance of being irregularly cribrate.

Length: 1.4-1.7 mm. Width: 0.5± mm.

Holotype number 15949 in the Museum of Comparative Zoölogy, collected by Professor C. T. Brues in "Hot Spring no. 15; Opal Mine 25 mi. So. Denio, Ore." Paratypes: 61 with the same data as the holotype. Paratypes to be deposited in the Museum of Comparative Zoölogy, the United States National Museum, the Canadian National Collection, the California Academy of Sciences, the collection of Mr. H. C. Fall, and that of the writer.

This species is allied by the pronotal sculpture and the character of the ventral pubescence to *Helmis pusilla*, *foveata*, and *similis*, but it may be easily distinguished by its much narrower form and the coarsely punctate, inconspicuously costate elytra. Occasionally the punctures of the elytra are filled up or concealed by a superficial layer of dirt, but the remaining characters are sufficient to make the species readily recognizable. Professor Brues found two specimens of *H. similis* in the same locality.